ANTERIOR APPROACH CELIAC PLEXUS NEUROLYSIS FOR A PATIENT WITH NECROTISING FASCIITIS OF THE BACK

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Abstract:
Celiac plexus block is a time tested method for management of pain. It is conventionally done via posterior approach. We report successful use of anterior celiac plexus to manage pain in a case of chronic pancreatitis with necrotising fasciitis of the back.

Keywords: Anterior celiac plexus block; Necrotising fasciitis; Fluoroscopy; Neurolysis; Chronic Pancreatitis

Introduction:
Pancreatitis is a serious condition that manifests due to inflammation of the pancreas. It results in pain localized to the upper-to-middle abdomen and may radiate to the back. Conventional treatment strategies for acute pancreatitis include fasting and parental feeding, fluid therapy, and pain management with narcotics for severe pain or nonsteroidal anti-inflammatories for milder cases. A celiac plexus block (CPB) is a time tested method for management of pain in patients with chronic abdominal pain of celiac ganglion origin. Its role in the control of pancreatic cancer pain is well established, but the benefit in chronic pancreatitis pain is controversial. Conventionally it is performed via a posterior approach with fluoroscopic or CT guidance. There are very few reports of anterior approach for neurolytic block of the celiac plexus using fluoroscopy. We report the successful use of fluoroscopic guided anterior approach celiac plexus block in a patient with chronic pancreatitis and necrotising fasciitis of the back.

Case History:
A 40 year old male who was a known case of chronic pancreatitis of probable alcoholic origin and diabetes mellitus presented with extensive necrotising fasciitis of the back. He underwent debridement of necrotising fasciitis twice over a period of one week under general anaesthesia. During his postoperative course he developed severe pain abdomen due to aggravation of his chronic pancreatitis. The patient had severe pain and sleep disturbances. His medication included oral Paracetamol 325MG and Tramadol 375mg combination 6 hourly and amitryptyline 10 mg bd. His pain was not relieved even by addition of fenatanyl 25mcg/hour intravenous infusion. Thoracic epidural and celiac plexus block by posterior approach for pain relief were contraindicated due to local infection (Fig 1). Hence, an anterior approach to celiac plexus block using fluoroscopy was planned after obtaining written informed consent.

The patient was kept nil orally for 6 hours. In the operating theatre, routine monitoring was initiated. Under strict asepsis cutaneous puncture site marked 1.5cm below and 1.5cm to the left of the xiphoid process and the puncture site was infiltrated with 2 ml of 1% lidocaine. A 22-gauge, 15-cm long spinal needle was introduced through the anaesthetised area under fluoroscopic guidance in anterior posterior view. Fig 2 The needle was directed caudally and towards the midline and advanced till its tip was positioned at the upper part of L1 vertebra in the midline(Fig 2 A). A
90° lateral fluoroscopic view was then obtained to place
the needle tip approximately 1.5cm anterior to the L1
vertebral body. After confirming a negative aspirate for
blood, the needle position was confirmed with injection of
2ml water-soluble contrast (Fig 2B). In the anterior
posterior view, the contrast dye must be in the midline and
concentrated around vertebral bodies T12 and L1. The
contrast dye should not spread beyond the contours of the
vertebral bodies. In the lateral view, a smooth contour of
the dye should be in front of the vertebral bodies. A
diagnostic block with 10ml 1%lidocaine resulted in more
than 50% pain relief after 5 minutes. Celiac plexus
neurolysis was then performed with 20 ml of absolute
alcohol. As the needle was withdrawn, 3 mL of 0.25%
bupivacaine was injected. The patient was
haemodynamically stable throughout the procedure. Post
procedure the patient had excellent pain relief he was
monitored in the PACU for 2 hours, following which he was
transferred to the ward. However the pain assessment
after 24 hours, 3 days and one week later, the patient had
more than 50% pain relief and was comfortable with only
oral Paracetamol with Tramadol combination 8th hourly.

**Figure 1 :** Photo showing necrotising fasciitis of the back
contraindicating conventional posterior approach to celiac
plexus.

**Discussion :**
The percutaneous anterior approach to the celiac plexus
was advocated early in this century, only to be abandoned
because of the high incidence of complications. The
availability of fine needles, improvements in imaging
technology has led to renewed interest in the anterior
approach to the celiac plexus. Extensive experience with
percutaneous transabdominal biopsy has confirmed the
relative safety of this approach and has provided the
rationale for anterior celiac plexus block.0

Celiac plexus block performed via an anterior approach has
several advantages over a posterior approach, including
shorter procedure time, less discomfort to the patient, and
less risk of neurologic complications.1 Although initially
celiac plexus blocks were performed without imaging
guidance, computed tomography (CT) is frequently used.2
Utrasound, fluoroscopy and endoscopic ultrasound are
also being used.

**Figure 2 :** A Fluoroscopic image of needle placement in AP view. B
Fluoroscopic image of needle placement and dye spread in lateral
view.

Most authors have described and evaluated the procedure
via a posterior approach, usually under fluoroscopic
guidance. However, conventional posterior approach for
celiac plexus block cannot be used in patients, whose
anatomy is distorted or those having infection at the site of
injection as in our case.

Only few authors have reported using fluoroscopy for
anterior approach.04 The advantages of the anterior
approach to blocking the celiac plexus include relative
ease, speed, and reduced periprocedural discomfort as
compared with the posterior techniques.5 Also patients
need not remain prone for a long time, which can be a
distressing for patients suffering from intra-abdominal
pain. The supine position is also much more comfortable
for patients with ileostomies and colostomies. The anterior
approach to a celiac plexus block requires only one needle
and thus has the advantage of single puncture, resulting in
less discomfort to the patient, and use of a smaller volume.
of neurolytic agent. Furthermore, the needle does not impinge on either periosteum, nerve roots or pass through the paraspinous musculature. The precrural needle placement carries less risk of accidental neurologic injury related to retrocrural spread of drug to somatic nerve roots, epidural or subarachnoid spaces.\(^7\)

Local abdominal and back pain during or immediately after a celiac plexus block has been reported commonly because of the ablative effect of the neurolytic agent. Other common self-limiting complication is diarrhea occurs due to sympathetic blockade and unopposed parasympathetic efferent influence after the block, and usually resolves in around 48 hours. Orthostatic hypotension may occur due to loss of sympathetic tone and dilated abdominal vasculature. Neurologic complications such as paraplegia, leg weakness, sensory deficits, and paresthesias have been reported.

Complications related to puncture of the liver, stomach, pancreas and bowels are rare as fine needles are used. Other rare complications are impotence, gastroparesis, superior mesenteric vein thrombosis, chylothorax, aortic pseudo aneurysm, aortic dissection, and hemorrhage.

In conclusion the fluoroscopic guided anterior celiac plexus block is a safe and economical alternative to conventional posterior and CT guided celiac plexus block.

References: